

**United States
Department of
Agriculture**

Marketing and
Regulatory
Programs

Animal and
Plant Health
Inspection
Service



Oriental Fruit Fly Cooperative Eradication Program

Tampa, Florida

Environmental Assessment, May 1999

Oriental Fruit Fly Cooperative Eradication Program, Tampa, Florida

Environmental Assessment, May 1999

Agency Contact:

Terry McGovern

Project Leader

Oriental Fruit Fly Cooperative Eradication Program

4951-B East Adama Drive, Suite 220

Tampa, FL 33605

Telephone: 813-228-2121

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Mention of companies or commercial products in this report does not imply recommendation or endorsement by the U.S. Department of Agriculture over others not mentioned. USDA neither guarantees nor warrants the standard of any product mentioned. Product names are mentioned solely to report factually on available data and to provide specific information.

This publication reports research involving pesticides. All uses of pesticides must be registered by appropriate State and/or Federal agencies before they can be recommended.

CAUTION: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife—if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

Table of Contents

| | |
|--|---|
| I. Need for the Proposal | 1 |
| II. Alternatives | 2 |
| A. No Action | 2 |
| B. Quarantine Only | 2 |
| C. Quarantine and Commodity Certification | 3 |
| D. Eradication | 3 |
| III. Environmental Effects | 4 |
| A. Human Health | 5 |
| B. Nontarget Species | 6 |
| C. Environmental Quality | 7 |
| IV. Agencies, Organizations, and Individuals Consulted ... | 8 |

I. Need for the Proposal

The Oriental fruit fly, *Bactrocera dorsalis* (Hendel) (Synonym = *Dacus dorsalis* Hendel), is a destructive agricultural pest in many parts of the world. It attacks a wide variety of fruits, nuts, vegetables, and berries. The Oriental fruit fly has been established in Hawaii since 1948, and damages every commercial fruit crop grown there. Eradication programs have prevented the establishment of the Oriental fruit fly in the conterminous United States, where it has been introduced a number of times since 1960. Because of the species' rapid population growth and potential for damage, a prompt response is usually desired to contain and eradicate any infestation found in the conterminous United States.

In May 1999, the Animal and Plant Health Inspection Service (APHIS) and the Florida Department of Agriculture and Consumer Services (FDACS) detected Oriental fruit flies on the peninsula just north of Mac Dill Air Force Base in the Tampa area of Hillsborough County, Florida. The present infestation is limited to areas on this peninsula in the Tampa Bay area, but the threat of spread to nearby commercial groves and crops in the State requires the program to consider regulatory quarantines and treatments. The infestation represents a major threat to the agriculture and environment of Florida and other U.S. mainland States. APHIS is proposing to cooperate with FDACS in a regulatory and eradication program to prevent the spread of Oriental fruit fly to noninfested areas of the conterminous United States.

APHIS' authority for cooperation in the program is based upon the Organic Act (7 United States Code (U.S.C.) 147a), which authorizes the Secretary of Agriculture to carry out operations to eradicate insect pests, and the Federal Plant Pest Act (7 U.S.C. 150dd), which authorizes the Secretary of Agriculture to use emergency measures to prevent the dissemination of plant pests new to or not widely distributed throughout the United States.

This site-specific environmental assessment analyzes alternatives for regulatory control of the Oriental fruit fly and incorporates by reference the analyses, discussions, and conclusions of two earlier documents: APHIS' programmatic environmental assessment (EA), the "Oriental Fruit Fly Regulatory Program, Environmental Assessment, November 1991" and the "Human Health Risk Assessment, APHIS Fruit Fly Programs" (human health risk assessment). This EA considers the previously identified alternatives of no action, quarantine only, quarantine and commodity certification, and eradication (preferred alternative). Control methods proposed as components of the preferred alternative include (1) no action, (2) quarantine, (3) regulatory chemicals applications (fumigation, soil treatment, and bait spray application),

(4) eradication chemical applications (fruit fly male annihilation spot treatment and soil treatment), (5) cold treatment, (6) vapor heat treatment, and (7) irradiation treatment.

II. Alternatives

APHIS, in its programmatic EA, originally identified three alternatives. They are (1) no action, (2) quarantine only, and (3) quarantine and commodity certification. Each of those alternatives is described concisely below (and in greater detail in the programmatic EA). Our review of this proposed program and of the technologies currently available to APHIS for an emergency program of this nature has identified the need for eradication chemical treatments within the infested area. The preferred alternative (eradication) incorporates eradication chemical treatments with the methods used in the other alternatives.

A. No Action

The no action alternative would involve no Federal regulatory effort to restrict the spread of the Oriental fruit fly or facilitate (certify) the commercial movement of Oriental fruit fly host materials and other regulated articles. In the absence of a Federal effort, quarantine and control would be left to State government, grower groups, and individuals. The infestation's expansion would be limited by any controls exerted over it, by the proximity of host plants, and by climatic conditions. No action could be applied on a limited basis for sensitive sites, but there would be limited control of the damage from Oriental fruit fly in these areas and continuing infestation would be expected. Expansion of the infestation would result in substantial economic losses to growers in the United States and losses of U.S. export markets.

B. Quarantine Only

Under the quarantine only alternative, commodities harvested within the quarantine area would be restricted to movement within that area. The absence of regulatory treatments would result in a reduction of the movement of Oriental fruit flies to outside of the quarantined area, but the infestation would remain established within the quarantine boundaries. Oriental fruit fly eradication efforts would be managed by and are wholly under the control of FDACS. A Federal quarantine excluding regulatory treatments requires that commodities harvested within the quarantine boundaries be destroyed or remain within the quarantined area. In large infestations, intensive quarantine enforcement

activities may be necessary, including safeguarding of local fruit stands, mandatory baggage inspection at airports, and judicious use of road patrols and roadblocks.

C. Quarantine and Commodity Certification

This alternative couples the Federal quarantine previously described with commodity treatment and certification. The same quarantine, described above, would be imposed, but commodity certification (with prescribed treatments) would allow the movement of certain commodities outside the quarantine area. This would complement the State's efforts to eradicate the infestation. APHIS' Plant Protection and Quarantine commodity certification regulations set requirements for the movement of regulated produce harvested within the quarantined boundaries to outside locations. Interstate movement of that produce requires the issuance of a certificate or limited permit, contingent upon the grower or shipper complying with specific conditions designed to minimize pest risk and prevent the spread of the Oriental fruit fly.

Control methods that may be used in this alternative include (1) no action, (2) quarantine, (3) regulatory chemicals (fumigation, soil treatment, and bait spray application), (4) cold treatment, (5) vapor heat treatment, and (6) irradiation treatment. No action could be used in a limited sense where regulatory efforts would not be allowed under a State or local law, or could be used temporarily until such a legal constraint could be resolved or where an effective treatment does not exist for a commodity. The quarantine component is essentially the same as the alternative described in "B." above. Regulatory chemical treatments would include fumigation with methyl bromide, soil treatment with diazinon, and topical bait spray with a mixture of malathion and a protein hydrolysate bait. (Refer to the programmatic EA for more detailed information about the chemicals and their uses.) Cold treatment of certain produce, as a requirement for certification and shipping, may be done in facilities that are inspected and approved by APHIS. Vapor heat treatment is also used for treatment of certain produce prior to movement, in facilities that are approved by APHIS.

D. Eradication

APHIS' preferred alternative for the program is Oriental fruit fly eradication using an integrated pest management (IPM) approach. This alternative combines all of the methods described in the other alternatives with eradication chemical treatments. These chemical treatments include soil treatment with diazinon (same method as regulatory treatment) and fruit fly male annihilation spot treatments. Fruit fly male annihilation treatments involve the application of a mixture of naled, Min-U-Gel®,

and methyl eugenol in 3- to 5-milliliter spots. Using hand-held equipment, the lure-insecticide spots are made to tree trunks, utility poles, and similar locations above the reach of the general public. Treatments are typically made from a slow-moving vehicle. These treatments are generally applied to 600 evenly distributed spots per square mile in a 9-mile area around each fly find. (For more detailed information on the alternatives for Oriental fruit fly control and their component methods, refer to fruit fly risk assessments.)

III. Environmental Effects

The potential environmental consequences of each of the alternatives (no action, quarantine only, quarantine and commodity certification, and eradication) were considered. The proposed program, eradication, would involve an IPM approach that would use any or a combination of the following control methods: (1) no action, (2) quarantine, (3) regulatory chemicals (fumigation, soil treatment, and bait spray application), (4) eradication chemical applications (fruit fly male annihilation spot treatment and soil treatment), (5) cold treatment, (6) vapor heat treatment, and (7) irradiation treatment. Each of these has been analyzed and discussed in detail within the programmatic EA and the human health risk assessment. (Refer to those documents for more detailed information.)

For this specific program, the following issues were identified and analyzed: (1) potential effects on human health from chemical pesticide applications, (2) potential effects on wildlife (including endangered and threatened species) from program activities and treatments, and (3) potential effects on environmental quality. The site-specific characteristics of the program area were considered with respect to their potential to alter or influence the anticipated effects on human health, wildlife, or environmental quality. No significant cumulative impacts are expected as a consequence of the proposed program or its component treatment methods.

The proposed program's area has urban and suburban characteristics. The pest detections are near heavily populated residential areas. There are a number of sensitive sites near the proposed quarantine area. The presence of some bodies of water requires careful management. The eradication applications using fruit fly male annihilation spot treatments are unlikely to pose any risks in the present treatment area. The use of site-specific buffers may be needed to avoid drift and minimize contamination of those water bodies, particularly if an expanded program should require bait spray applications as part of the regulatory treatments. In particular, Hillsborough River State Park and Busch Gardens are sites

of concern for any expansion of the program in Hillsborough County. Busch Gardens is a major amusement park and wild animal park on the east side of Tampa. Standard program operational procedures and mitigative measures will be employed to avoid adverse impacts to these areas.

A. Human Health

The principal concerns for human health are related to the program use of chemical pesticides: malathion bait, diazinon (a soil drench), naled lure (spot treatments), and methyl bromide (a fumigant). Three major factors influence the human health risk associated with pesticide use: fate of the pesticides in the environment, their toxicity to humans, and their exposure to humans. Each of the program pesticides is known to be toxic to humans. Exposure to program pesticides can vary, depending upon the pesticide and the use pattern. Potential exposure is low for all applications except malathion bait. The limited program use of malathion bait is for regulatory treatments only and these applications are only applied to commercial groves where exposure to the general public is unlikely. The analyses and data of the programmatic EA and human health risk assessment indicate that exposures to pesticides from normal program operations are not likely to result in substantial adverse human health effects. (Refer to the programmatic EA, the human health risk assessment, and their supporting documents for more detailed information relative to human health risk.)

The alternatives were compared with respect to their potential to affect human health. In general, a well-coordinated eradication program using IPM technologies would result in the least use of chemical pesticides overall and the least potential to adversely affect human health. The other alternatives would not be expected to eliminate Oriental fruit fly as readily or as effectively as the eradication alternative. The no action alternative, the quarantine only alternative, and the quarantine and commodity certification alternative would be expected to result in broader and more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse impact.

Consistent with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," APHIS considered the potential for disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. In general, the population of the program area is diverse. There are, however, some areas that have minority communities within Hillsborough County. In particular, there is a large Cuban-American population in the vicinity of Ybor City. Any

expansion of the program to areas with a large Spanish-speaking population will require that any pertinent public documents and notifications also be provided in Spanish. There is no evidence that any one population is likely to have disproportionate effects from these program activities. APHIS also recognizes that a proportion of the population may have unusual sensitivity to certain chemicals or environmental pollutants and that program treatments pose higher dangers for these individuals. Special notification procedures and precautions, as stated in the programmatic EA's general mitigative measures, are required and serve to minimize the risk for this group.

B. Nontarget Species

The principal concerns for nontarget species (including endangered and threatened species) also involve the use of program pesticides. Paralleling human health risk, the risk to nontarget species is related to the fate of the pesticides in the environment, their toxicity to the nontarget species, and their exposure to nontarget species. All of the pesticides are highly toxic to invertebrates, although the likelihood of exposure (and thus impact) varies a great deal from pesticide to pesticide, and with the use pattern. In general, a well-coordinated eradication program using IPM technologies would result in the least use of chemical pesticides overall with minimal adverse impact to nontarget species. The no action alternative, the quarantine only alternative, and the quarantine and commodity certification alternative would be expected to result in broader and more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse impact. (Refer to the programmatic EA and its nontarget risk assessment for more information on risks to all classes of nontarget species.)

The area was considered with respect to any special characteristics that would tend to influence the effects of program operations. Potentially sensitive areas have been identified, considered, and accommodated through special selection of control methods and use of specific mitigative measures. The area contained no special characteristics that would require a departure from the standard operating procedures and mitigative measures that were described in the programmatic EA.

APHIS has consulted with the U.S. Department of the Interior, Fish and Wildlife Service (FWS), under the provisions of section 7 of the Endangered Species Act of 1973 for several previous programs in Hillsborough County. APHIS prepared a biological assessment for the Medfly Cooperative Eradication Program which uses similar treatment methods and FWS has concurred with APHIS' no effect determination, predicated on APHIS' adherence to specific protective measures. If the program expands to include areas of concern for these species, APHIS

will implement protective measures mutually agreed upon with FWS for the protection of endangered and threatened species, and their habitats. Based upon APHIS review of this program, it is our determination that no adverse impacts to endangered or threatened species, or their habitats, are foreseen.

C. Environmental Quality

The environmental quality issues include concerns for the preservation of clean air, pure water, and a pollution-free environment. Program pesticides remain the major concern for the public and the program in relation to preserving environmental quality. Although program pesticide use is limited, especially in comparison to other agricultural pesticide use, the proposed action would result in a controlled release of chemicals into the environment. The fate of those chemicals varies with respect to the environmental component (air, water, or other substrate) and its characteristics (temperature, pH, dilution, etc.). The half-life of malathion in soil or on foliage ranges from 1 to 6 days; in water, from 6 to 18 days. The half-life of naled on foliage ranges from 2.3 to 2.5 days. The half-life of diazinon in soil ranges from 1.5 to 10 weeks; in water at neutral pH, from 8 to 9 days. Methyl bromide's half-life is 3 to 7 days, but the small quantities used disperse when fumigation chambers are vented. (Refer to the programmatic EA and risk assessments for a more detailed consideration of the pesticides' environmental fates.)

The alternatives were compared with respect to their potential to affect environmental quality. Risk to environmental quality is considered minimal. Again, a well-coordinated eradication program using IPM technologies would result in the least use of chemical pesticides overall with minimal adverse impact on environmental quality. The no action alternative, the quarantine only alternative, and the quarantine and commodity certification alternative would be expected to result in broader and more widespread use of pesticides by homeowners and commercial growers, with correspondingly greater potential for adverse impact.

The proposed program area was examined to identify characteristics that would tend to influence the effects of program operations. Allowances were made for the special site-specific characteristics that would require a departure from the standard operating procedures. The approaches used to mitigate for adverse impacts to bodies of water are described in the EA.

IV. Listing of Agencies and Persons Consulted

Mike Stefan
Operations Officer
Program Support
Plant Protection and Quarantine
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
4700 River Road, Unit 134
Riverdale, MD 20737-1236

Terry McGovern
Port Director
Plant Protection and Quarantine
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
4951-B East Adamo Drive, Suite 220
Tampa, FL 33605

Joe Stewart
PPQ Officer
Plant Protection and Quarantine
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
1015 17th Street, West
Palmetto, FL 34221

Richard Clark
Chief, Bureau of Plant and Apiary Inspection
Division of Plant Industry
State of Florida
Department of Agriculture and Consumer Services
1911 SW 34th Street
P.O. Box 147100
Gainesville, FL 32164-7100

**Finding of No Significant Impact
for
Oriental Fruit Fly Cooperative Eradication Program
Tampa, Florida
Environmental Assessment
May 1999**

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) has prepared an environmental assessment (EA) that analyzes alternatives for control of the Oriental fruit fly, an exotic agricultural pest that has been found in central Florida. The EA, incorporated by reference in this document, is available from:

USDA, APHIS, PPQ
Tampa Work Unit
4951-B East Adamo Drive, Suite 220
Tampa, FL 33605

or

USDA, APHIS, PPQ
Program Support
4700 River Road, Unit 134
Riverdale, MD 20737-1236

The EA for this program analyzed alternatives of (1) no action, (2) quarantine only, (3) quarantine and commodity certification, and (4) eradication. Each of those alternatives was determined to have potential environmental consequences. APHIS selected eradication using an integrated pest management (IPM) approach for the proposed program because of its capability to achieve eradication in a way that also reduces the magnitude of those potential environmental consequences.

APHIS has determined that this program will have no adverse impacts to endangered and threatened species based upon consultations for several previous programs in Hillsborough County with the U.S. Department of the Interior, Fish and Wildlife Service (FWS). If the program expands to include areas of concern for endangered and threatened species and their habitats, APHIS will adhere to protective measures designed specifically for this program and mutually agreed upon with FWS.

I find that implementation of the proposed program will not significantly impact the quality of the human environment. I have considered and based my finding of no significant impact on the quantitative and qualitative risk assessments of the proposed pesticides and on my review of the program's operational characteristics. In addition, I find that the environmental process undertaken for this program is entirely consistent with the principles of "environmental justice," as expressed in Executive Order No. 12898. Lastly, because I have not found evidence of significant environmental impact associated with this proposed program, I further find that an environmental impact statement does not need to be prepared and that the program may proceed.

/S/
Michael J. Shannon
State Plant Health Director

6/1/99
Date